

16 OCT 2007

Subj: CG-1 TECHNICAL AUTHORITY

1. PURPOSE. This instruction establishes Commandant (CG-1)'s technical authority pertaining to Human Systems Integration (HSI), to include manpower, personnel, training, human factors engineering, occupational health and safety, habitability, and personnel survivability, for the design, construction, support and sustainment of Coast Guard systems and assets. This instruction explains HSI and technical authority responsibilities and interaction with asset and systems acquirers in providing best value systems engineering and technical products to achieve best total system performance within total ownership cost constraints.
2. ACTION. Area, district, and sector commanders, commanders of maintenance and logistics commands, commanding officers of integrated support commands, commanding officers of headquarters units, assistant commandants for directorates, Judge Advocate General, and special staff elements at Headquarters shall comply with the provisions of this instruction. Internet release is authorized.
3. DIRECTIVES AFFECTED. None.
4. BACKGROUND. There are three fundamental components of every major system subject to the system engineering process: the hardware, the software, and the human. All three components must be integrated and balanced for maximum effectiveness and efficiency of the total system. It is essential throughout the design and construction of Coast Guard assets and systems that key technical and production issues related to each of these three components be addressed concurrently, properly and adequately. Commandant (CG-4) is the Technical Authority for the design, construction and maintenance of Coast Guard Systems and assets; the "hardware" component. Commandant (CG-6) is the Technical Authority for the design, development, deployment, security, protection and maintenance of all Coast Guard Command, Control, Communications, Computers and Information Technology Systems (C4IT), the "software" component. For the "human" component, Commandant

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(CG-1) has the personnel and expertise to develop and employ consistent, disciplined, collaborative HSI processes essential to safe, reliable, effective, integrated, timely, and affordable assets for the Coast Guard. The offices within Commandant (CG-1) are aligned by technical areas and empowered to provide disciplined advice and decisions consistent with their expertise in integrating the disciplines of human factors engineering, manpower, personnel, training, habitability, personnel survivability, and occupational health and safety into the systems engineering of a materiel system to ensure safe, effective operability and supportability. This alignment, in combination with the technical authorities for the “hardware” and “software” components, is essential to an agile, effective, and efficient systems engineering workforce. The independence of technical authority is an essential aspect of our human resources community because it (1) ensures that the human element, our most valuable resource, is incorporated into all stages, especially the early stages, of system design, and (2) provides the checks and balances necessary to ensure assets and systems meet the changing needs of the Coast Guard.

5. **ROLES & RESPONSIBILITIES.** The following lists roles and responsibilities of organizations involved in the technical authority process.
 - a. **Program Authority.** The Program Authority is the acquisition program/project manager. The Program Authority has authority over the acquisition and acceptance of the asset or system, and acts on the government’s behalf in all matters relating to procurement of the asset or system. In executing its acquisition responsibilities, the Program Authority shall work collaboratively with the Technical Authorities from program inception to include and administer established policies, standards, guidelines, architecture, and best practices provided by the Technical Authorities. The Program Authority also implements the results of the Technical Authorities’ adjudication of changes and deviations to the established standards. The Program Authority will facilitate collaborative efforts between industry and government members.
 - b. **Program Sponsor.** The Program Sponsor is the organizational entity that owns the requirements and directly benefits from the use of the acquired system that addresses those requirements. The Program Sponsor shall work collaboratively with the Technical Authorities from conceptual design to ensure that requirements and capabilities are developed and established with due regard for technical policies, standards, guidelines, architecture, configuration management, and best practices provided by the Technical Authorities. The Program Sponsor implements the results of the Technical Authorities’ adjudication of changes and deviations to the established standards.
 - c. **Technical Authority.** The Technical Authority for Human Systems Integration (HSI) programs is Commandant (CG-1). HSI addresses the “human” component of the system design process and ensures systems are designed, produced, supported, fielded, and modernized through a complete and careful integration of the human component. This includes: human factors engineering (HFE); manpower, personnel, and training (MPT); occupational health and safety; habitability; and personnel survivability design elements to be incorporated in the development of assets and systems. Technical authority is the authority, responsibility, and accountability to establish, monitor, and approve technical

standards, tools, and processes, relating to HSI, in conformance with policy, requirements, architectures, and standards.

Commandant (CG-1), as the Technical Authority for HSI, is responsible for sustaining the workforce associated with all operational assets, and for providing expertise and advice in HSI competencies. In executing its responsibilities, the Technical Authority shall work collaboratively with other technical authorities, the Program Sponsor, and the Program Authority from program inception to define the roles, provisions, and accommodations for human capabilities and limitations in system developments as well as the technical standards to which the human component of the asset is to be designed and integrated. In addition, the Technical Authority is responsible for adjudicating all changes and deviations as they apply to these standards and their interpretation.

Commandant (CG-1) is responsible for structuring a programmatically independent technical authority to:

- (1) Work with Program Sponsors to develop HSI outcomes of requirements.
 - (2) Identify HSI technical standards, methods, tools, and processes that deliver the human performance required by the asset to meet programmatic needs.
 - (3) Ensure assets are certified to meet the established HSI requirements.
 - (4) Ensure asset workforce demands are supported properly throughout their life cycle.
 - (5) Ensure timely and responsive HSI technical decisions so that human performance and design requirements are addressed concurrently with other system performance and design requirements.
 - (6) Provide functional area representation to the acquisition project and ensure HSI requirements are adequately addressed in project planning and appropriately included in solicitations and contracts.
6. TECHNICAL AUTHORITY PROCESSES AND CERTIFICATIONS. Technical Authority processes and associated certifications are an essential aspect of independent technical authority, providing objective evidence of effective, efficient, and affordable human engineering. These processes will be further defined in subsequent instructions.
 7. CONCLUSION. The technical authority process and policies exist to ensure the Coast Guard has the best value engineering and technical products as well as to ensure our assets, new and existing, are designed with the most effective, efficient, and affordable crew composition, workforce management support, job performance preparation, human performance reliability, and a habitable and safe work environment. Through the close partnership between the designated Technical Authorities, Program Sponsors, and the acquirers in Commandant (CG-9), we can ensure our continued mission readiness.

8. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. Environmental considerations were examined in the development of this Instruction and have been determined to be not applicable.
9. FORMS/REPORTS. None.

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Commandant